
सादा कॉपियर कागज़ — विशिष्टि
(पहला पुनरीक्षण)

Plain Copier Paper — Specification
(First Revision)

ICS 85.060

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FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Paper and Its Products Sectional Committee had been approved by the Chemical Division Council.

This standard was first published in 1997. The myth that any ordinary paper of indeterminate quality can be handled successfully by plain paper copier, made the Paper and Its Products (Excluding Packaging Materials) is properly addressed by the Sectional Committee to decide to formulate a specification for plain copier paper, commonly known as photocopier paper.

A wrongly formulated paper can cause never ending customer dissatisfaction and service engineer frustration. Plain paper copiers can tolerate only certain grades of paper.

The Committee responsible for the formulation of this standard has decided to revise it again based on technological advancements and latest practices in the field of copier paper.

In this revision, besides the amalgamation of amendments, the scope has been modified, cut sizes relevant to this product have been incorporated in size clause, the requirement of brightness and opacity have been upgraded. Requirement of ash content, moisture and thickness have been modified. Packing clause has been modified. The requirement of additional variety having 70 GSM have been incorporated in the standard. A recommendatory clause for selection of raw material and its source for manufacturing copier paper has also been introduced for guidance purpose. References of latest available test method standards have also be made in this standard.

A scheme for labelling environment friendly products known as ECO Mark has been introduced at the instance of the Ministry of Environment and Forest (MEF), Government of India. The ECO Mark scheme would be administered by the Bureau of Indian Standards (BIS) under the *Bureau of Indian Standards Act*, 1986 as per the Resolutions No. 71 dated 21 February 1991 and No. 425 dated 28 October 1992 published in the Gazette of the Government of India. For a product to be eligible for marking with ECO logo, it shall also carry the ISI Mark of BIS besides meeting additional environment friendly requirements. For this purpose, the Standard Mark of BIS would be a single mark being a combination of the ISI Mark and the ECO logo. Requirements to be satisfied for a product to qualify for the BIS Standard Mark for ECO friendliness, will be optional; manufacturing units will be free to opt for the ISI Mark alone also.

This standard, therefore, incorporates environment friendly requirements for plain copier paper which is based on the Gazette Notification No. 455 dated 13 November 1992 for paper as environment friendly products published in the Gazette of India.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

PLAIN COPIER PAPER — SPECIFICATION

(*First Revision*)

1 SCOPE

This standard prescribes requirements and methods of sampling and tests for plain copier paper (cut size paper in A4, A3, A5, FS, B4, B5, Legal sizes) within the specified grammage (GSM).

2 REFERENCES

The Indian Standards listed in Annex A contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revisions, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the Indian Standards.

3 TERMINOLOGY

For the purpose of this standard, the definitions of terms given in IS 4661 shall apply.

4 MATERIAL

The reel/sheets intended for manufacturing of plain copier paper (cut size) shall conform to requirements of this standard.

5 REQUIREMENTS

5.1 General

The plain copier paper shall be devoid of pinholes when seen through the naked eyes (*see* Note 1). The surface shall be well calendered, quite smooth and free from fluff or loose fibers. Surface sizing is desirable for avoiding fluff.

NOTES

1 Eye unaided by any instrument (other than spectacles for eyesight problem) that changes the apparent size or distance of an object.

2 Chemicals sensitive to heat should be avoided for surface sizing as the waxes and some polymers may adhere to photo conductor surface causing defects in photocopy.

The paper shall have good dimensional stability, thermal stability and shall not have any static charge.

5.2 Moisture

Moisture content shall not be more than 6 percent when tested as per IS 1060 (Part 5/Sec 2).

5.3 Grammage (Substance)

The grammage (substance) of plain copier paper shall be either of 70 g per square metre or 75 g per square metre or 80 g per square metre, when tested as per IS 1060 (Part 5/Sec 5). No single test result shall vary by more than ± 4 percent from the nominal grammage. Further the mean value of 10 test results shall not vary from the nominal grammage by more than ± 2.5 percent.

The paper under test shall be conditioned as per IS 1060 (Part 4/Sec 1) before it is subjected to this test.

5.4 Thickness

The uniform thickness of paper shall not be less than 95 μm , when tested as per IS 1060 (Part 5/Sec 3).

5.5 The paper shall also comply with the requirements given in Table 1.

5.6 Size

The paper shall be cut size paper in A4, A3, A5, FS, B4, B5, Legal sizes along with the permissible tolerance according to IS 1064.

5.7 Additional Requirements for ECO-Mark

5.7.1 General Requirements

5.7.1.1 The product shall conform to the requirements for quality and performance prescribed under 5.1 to 5.5.

5.7.1.2 The manufacturers shall produce to BIS, environmental consent clearance from the concerned State Pollution Control board as per the provisions of *Water (Prevention and Control of Pollution) Act, 1974* and *Air (Prevention and Control of Pollution) Act, 1981* along with the authorization, if required under the *Environment (Protection) Act, 1986* while applying for ECO-Mark.

5.7.2 Specific Requirements

- The material shall be manufactured from pulp containing not less than 60 percent by mass of pulp made from materials other than bamboo, hard woods, soft woods and reed.
- The material shall be manufactured from pulp made from 100 percent waste paper.

Table 1 Requirements for Plain Copier Paper
(Clause 5.5)

Sl No.	Characteristic	Requirement	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	ISO brightness, percent, <i>Min</i>	85	IS/ISO 2470 (Part 1)
ii)	Opacity, percent, <i>Min</i>	88	IS/ISO 2471
iii)	One minute cobb test, both sides, g/m ² , <i>Max</i>	30	IS 1060 (Part 5/Sec 4)
iv)	Surface strength, Dennison (Wax Pick)	No pick on 12 A	8 of IS 1060 (Part 3)
v)	Smoothness for both sides (Bendsten), ml/min, <i>Max</i>	300	3 of IS 9894
vi)	Ash content (at 900°C), percent by mass, <i>Max</i>	16	11 of IS 1060 (Part 1)
vii)	Taber stiffness, <i>Min</i>		Appendix D of IS 4658
	a) Machine direction (MD)	2.0	
	b) Cross direction (CD)	1.0	
viii)	Tear index, mN.m ² /g, <i>Min</i>		IS 1060 (Part 6/Sec 1)
	a) Machine direction (MD)	3.5	
	b) Cross direction (CD)	4.5	
ix)	Tensile index, N.m/g, <i>Min</i>		IS 1060 (Part 5/Sec 6)
	a) Machine direction (MD)	40	
	b) Cross direction (CD)	25	

6 PACKING AND MARKING

6.1 Packing

Each ream containing 500/250 sheets of paper shall be wrapped by means of paper of minimum 80 GSM duly laminated to prevent moisture absorption and shall be strong enough to avoid any external impact during transit. It shall then be either packed in shrink bundling or 3/5 ply corrugated cartons to ensure that the paper is not damaged due to handling and transportation or shall be packed as agreed to between the purchaser and the supplier. The maximum weight per carton should not be more than 40 kg.

For packing 100/50 sheets of paper poly pouch may also be used and label shall be marked as per 6.2.

6.1.1 For ECO-Mark, the product shall be packed in such packages which shall be recyclable/reusable or biodegradable.

6.2 Marking

The package shall be marked with the following particulars:

- Description and size of the paper;
- Quantity;
- Mass of 500/250 sheets including wrapping paper, in kg/ream. Chargeable weight should be read as net weight excluding the weight of packing;
- Lot no. and month and year of manufacture; and
- Name of manufacturer.

6.2.1 For ECO-Mark, following additional information may also be marked on the container/package:

The criteria for which the product has been labelled with ECO-Mark.

6.2.2 BIS Certification Marking

The packages may also be marked with the Standard Mark.

6.2.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

7 SAMPLING AND CRITERIA FOR CONFORMITY

7.1 The plain copier paper shall be sampled in accordance with 3 of IS 1060 (Part 1).

7.2 Tests

From each of the ream, selected from the lot (*see 7.1*), one sheet shall be taken out at random from each ream subject to total minimum 10 sheets, if selected reams are less than 10. These sheets shall constitute the sample. The sheets selected shall first be tested for general requirements given in 5.1 and 5.6. One test piece shall be cut from each sheet selected for each of the characteristics mentioned in 5.2 to 5.4 and Table 1 and tested. A sheet not meeting the requirements for

any one or more characteristics shall be considered as defective.

7.3 Criteria for Conformity

A lot shall be declared as conforming to all the requirements of this standard if the number

of defective sheets found does not exceed the acceptance number. The acceptance number shall depend upon the size of the sample and shall be zero if the size is less than 13. The acceptance number shall be one if it is greater than or equal to 13.

ANNEX A

(Clause 2)

LIST OF REFERRED INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
1060	Methods of sampling and test for paper and allied products:	(Part 6/ Sec 1) :	Methods of test for paper,
(Part 1) : 1966	Part 1 (<i>revised</i>)	2014/ISO 1974 :	Section 1 Determination of tearing
(Part 3) : 1969	Part 3	2012	resistance — Elmendorf method
(Part 4/Sec 1) :	Methods of test for paper board	1064 : 1980	Paper sizes (<i>second revision</i>)
2014/ISO 187 :	and pulp, Section 1 Standard	4658 : 1988	Specification for coated paper and
1990	atmosphere for conditioning and		board (art and chromo) (<i>first</i>
	testing and procedure for		<i>revision</i>).
	monitoring the atmosphere and	4661 : 1999	Glossary of terms used in paper
	conditioning of samples		trade and industry (<i>second</i>
(Part 5)	Methods of test for paper and		<i>revision</i>)
	board,	9894 : 1981	Methods of test for smoothness/
(Sec 2) : 2014/	Determination of moisture content		roughness of paper
ISO 287 : 2009	of a lot — Oven-drying method	IS/ISO 2470	Paper board and pulps
(Sec 3) : 2014/	Determination of thickness	(Part 1) : 2009	measurement of diffuse blue
ISO 534 : 2011	density and specific volume		reflectance factor : Part 1 Indoor
(Sec 4) : 2014/	Determination of water		daylight conditions ISO brightness
ISO 535 : 1991	absorptiveness — Cobb method	IS/ISO 2471 : 2008	Paper and board determination of
(Sec 5) : 2014/	Determination of grammage		opacity paper backing diffuse
ISO 536 : 2012			reflectance method
(Sec 6) : 2014/	Determination of tensile		
ISO 1924-2 :	properties — Constant rate of		
2008	elongation method (20 mm/min)		

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Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards : Monthly Additions'.

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Amendments Issued Since Publication

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